UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/576,990	04/26/2006	R. Andrew Hicks	DREX-1108US	4338

21302 7590 11/17/2009

KNOBLE, YOSHIDA & DUNLEAVY
EIGHT PENN CENTER
SUITE 1350, 1628 JOHN F KENNEDY BLVD
PHILADELPHIA, PA 19103

EXAMINER	
VILLECCO, JOHN M	
ART UNIT	**PAPER NUMBER**
2622	

MAIL DATE	DELIVERY MODE
11/17/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/576,990	HICKS, R. ANDREW	
	Examiner	Art Unit	
	JOHN M. VILLECCO	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 November 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17 and 20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17 and 20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 April 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's arguments and amendment filed November 9, 2009, with respect to the rejection(s) of claim(s) 3, 13-17, 19, and 20 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Borza (U.S. Patent No. 6,700,606).

2. ***This action is non-final*** due to the new grounds of rejection that was not necessitated by amendment. The Examiner apologizes for the delay in prosecution.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 16 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In particular, applicant has claimed that the method is repeated thousands to millions of times per second. This limitation can not be found in the specification. Page 5, lines 28-33 discloses that the micromirror is capable of changing its state thousands to millions of times per second. However, this part of the specification

does not disclose that the method is carried out thousands to millions of times per second. In fact, page 7, lines 19-22 discloses that each individual image is captured at a frame rate (i.e. the rate at which images are viewed on television). Frame rates of thousands to millions of times per second would have been unheard of and impossible to achieve at the time the invention was made. Since applicant has only disclosed that the mirror can be changed from state to state thousands of times per second, not that the method is performed thousands to millions of times per second, this limitation constitutes new matter.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-15, 17, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borza (U.S. Patent No. 6,700,606) in view of Stoltz (U.S. Patent No. 5,212,555).

7. Regarding ***claim 1***, Borza discloses a biometric scanner which used micromirrors to capture plural images of the scene. More specifically and as it relates to the applicant's claims, Borza discloses a photographic image system (image sensor, 8); a micromirror array (100) containing an array of micromirrors (120), each mirror being capable of tilting individually in at least two tilt directions (col. 5, line 55 to col. 6, line 65) to reflect different sets of pixels representing locations of the scene, said micromirror

array (100) being positioned with respect to the photographic imaging system so that mirrors (120) of the micromirror array (100) transfer reflected pixels representing location of the scene to be photographed to the photographic imaging system (8); and an assembly system (processor, col. 7, line 29) which forms a high resolution image of the scene by mosaicing pixel values into a high resolution image of the scene. See column 9, lines 24-29.

Borza, however, fails to specifically disclose that the assembly system forms the high resolution image by mosaicing extracted color values. Stoltz, on the other hand, discloses that it is well known in the art to use a micromirror device to form a color image of a subject. More specifically, Stoltz discloses a micromirror device (11) that reflects light from pixels to color image sensors (51a-51c). Color images provide for an enhanced image with advantage of representing an image as a person would see it. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the image sensor of Borza a color image sensor to that color images can be captured. Although Borza teaches individual pixels being projected onto three different color sensors, one or ordinary skill in the art would recognize that two dimensional CCD image sensors (as in Borza) commonly include colored pixels for capturing color images. Therefore, since Borza is used merely to show that it is well known in the art to capture color images using micromirror devices, Official Notice is taken as to the fact that it is well known in the art to capture color images using two dimensional CCD image sensors. Such a combination would result in the combination of prior art elements according to known methods to yield predicable results. Thus, one or

ordinary skill in the art could easily have constructed an array of color imaging elements as in Stoltz in a two dimensional array to capture a two-dimensional image.

8. As for ***claim 2***, Stoltz discloses that his camera can be used in a still camera or a television camera (video camera). Since Stoltz discloses the use of an A/D converter (34), the camera is a digital camera.

9. With regard to ***claim 4***, both Stoltz and Borza disclose that the captured images are combined to form an image. It is inherent that the camera of Stoltz correlates the extracted color values to corresponding locations of a scene, since the system is capable of constructing the image. See column 5, lines 14-22 of Stoltz.

10. Regarding ***claim 5***, if one where to interpret a left and right tilting direction in Borza as being the tilting of the micromirror past 90 degrees perpendicular, the fact that Borza teaches a plurality of positions for the micromirror indicates that the micromirror can be positioned in up to 320 positions in each tilt direction.

11. As for ***claim 6***, Borza teaches an unlimited number of positional states. See column 8, line 65 to column 9, line 7.

12. With regard to ***claims 7 and 8***, the micromirror array of both Stoltz and Borza can be interpreted to be both an micro-electromechanical array and a micro-optical-electromechanical array.

13. Regarding ***claims 9 and 10***, Stoltz discloses that his arrangement can be used in a still camera or a television camera (video camera). See column 2, line 60. Since Stoltz discloses an A/D converter (34), the camera is a digital camera.

14. As for ***claim 11***, Borza discloses that each mirror includes its own address circuitry (col. 5, lines 14-22), thus each mirror is individually controllable. Even though

Borza teaches the ability to use the same drive signal, the claim language is broad enough to read on a micromirror having individual address circuitry.

15. With regard to ***claim 12***, Stoltz discloses capturing multiple color values for each reflected pixel. See column 5, line 67 to column 6, line 5.

16. ***Claim 3*** is interpreted to be a method claim corresponding to claim 1. Please see the discussion of claim 1 above.

17. ***Claim 13*** is interpreted to be a method claim corresponding to claim 4. Please see the discussion of claim 1 above.

18. As for ***claim 14***, Borza discloses that each micromirror is capable of moving in two or more tilt directions. See column 8, line 65 to column 9, line 7.

19. With regard to ***claim 15***, Borza discloses that the images are collected at a frame rate. See column 10, lines 29-32.

20. Regarding ***claim 17***, Borza discloses that the system can capture a number of images based on the capability of the micromirror and that an analog micromirror can define an infinite number of positions. Thus, Borza teaches the ability to repeat the steps of the method at least 70 times. See column 9, lines 1-10.

21. ***Claim 19*** is interpreted to be a method claim corresponding to claim 12. Please see the discussion of claim 12 above.

22. As for ***claim 20***, Stoltz discloses capturing red, green, and blue color values for each reflected pixel. See column 6, line 3.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN M. VILLECCO whose telephone number is (571)272-7319. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571) 272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JOHN M. VILLECCO/
Primary Examiner, Art Unit 2622
November 15, 2009